

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: **Joachim Berthold et al.**)
Application Number: **10/589,048**) Group Art Unit: **1771**
Filed: **June 11, 2007**) Examiner: **Prem C. Singh**
Title: **Process For Preparing Polyolefins**)
In Suspension)

Honorable Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Sir:

Please enter the following Brief in response to the Final Office Action mailed June 3, 2011. Appellants filed a Notice of Appeal on September 2, 2011. The Office has been authorized to charge Deposit Account No. 50-5523 for the requisite fee for this Brief.

In view of comments provided herein, Appellants respectfully believe all the pending rejections in the instant application should be withdrawn.

Table of Contents

| | |
|---|----|
| Identification Page | 1 |
| Table of Contents | 2 |
| Real Party in Interest | 3 |
| Related Appeals and Interferences | 3 |
| Status of the Claims | 3 |
| Status of the Amendments | 3 |
| Summary of the Claimed Subject Matter | 3 |
| Grounds of Rejection to be Reviewed on Appeal | 6 |
| Argument | 6 |
| Conclusion | 18 |
| Signature and Certificate of Mailing | 18 |
| Claims Appendix | 19 |
| Evidence Appendix | 22 |
| Related Proceedings Appendix | 23 |

I. REAL PARTY IN INTEREST

The real party in interest is Basell Polyolefine GmbH, which is the assignee of record of the present application and which is a company organized and existing under the laws of Germany.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences, or judicial proceedings known to Appellants, Appellants' legal representative, or the assignee which may relate to, directly affect, or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 11, 13-21 and 23 stand rejected and are being appealed.

IV. STATUS OF AMENDMENTS

The amendment to pending claim 11 to correct its status was entered by the Examiner.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1-10 are canceled.

In independent claim 11, Appellants are currently claiming a continuous, suspension process for preparing polyolefin polymers having a bimodal or multimodal molar mass distribution from a monomer and at least one comonomer in the presence of a suspension medium in a first reactor and at least one downstream reactor which are connected in series and

operated under different reaction conditions within each of the reactors, wherein an after-reactor is avoided and a total yield of more than 98% is obtained. The process comprises: collecting all offgases leaving the first reactor and the at least one downstream reactor; compressing the collected offgases to a pressure ranging from 0.5 to 2.5 MPa in a compression stage to produce compressed offgases; cooling the compressed offgases to produce a cooled offgas material comprising a gaseous fraction comprising an inert gas, hydrogen, and the monomer and a liquid fraction comprising the comonomer and the suspension medium; separating the cooled offgas material into the gaseous fraction and the liquid fraction; recirculating the gaseous fraction into the first reactor; and recirculating the liquid fraction into at least one of the downstream reactors. The compressed offgases are cooled in a gas scrubber by contacting with at least a portion of the liquid phase fraction. (Appl., p. 1, lines 4 to 20; p. 2, lines 1 to 35; p. 6, lines 24-29; and p. 7, lines 1-5)

Claim 12 is canceled.

Claims 13-21 depend upon claim 11, with claim 13 further specifying that in the process, the offgases are compressed to a pressure ranging from 0.9 to 2.0 MPa (Appl., p. 2, lines 18-20); claim 14 further specifying that the offgases heat up to a temperature ranging from 30 to 250°C while the offgases are compressed (Appl., p. 2, lines 18-21); claim 15 further specifying that the compressed offgases are cooled to a temperature ranging from 0 to 100°C (Appl., p. 2, lines 27-28); claim 16 further specifying that the compressed offgases are cooled to a temperature ranging from 20 to 50°C (Appl., p. 2, lines 27-29); claim 17 further specifying that the cooled offgas material is separated at a pressure ranging from 0.5 to 2.5 MPa into the liquid fraction and the gaseous fraction, which are collected in a pressure vessel (Appl., p. 2, lines 27-32 and p. 6, lines 14-17); claim 18 further specifying that the continuous, suspension process is carried out in the

presence of a Ziegler-Natta catalyst and hydrogen (Appl., p. 2, line 37, to p. 3, line 2); claim 19 further specifying that the first reactor contains hydrogen and at least one comonomer, the hydrogen concentration in the first reactor being higher than the hydrogen concentration in the downstream reactor, and the comonomer concentration in the first reactor being lower than the comonomer concentration in the downstream reactor (Appl., p. 3, lines 2-6); claim 20 further specifying that the continuous, suspension process produces at least one polyolefin polymer comprising ethylene or propylene, and from 0 to 10% by weight, based on a total weight of the polyolefin polymer, of at least one alpha-olefin comprising from 4 to 10 carbon atoms (Appl., p. 3, lines 9-11, and claims as filed); and claim 21 further specifying that the suspension medium comprises a saturated hydrocarbon comprising from 4 to 12 carbon atoms, or a mixture of saturated hydrocarbons comprising from 4 to 12 carbon atoms (Appl., p. 3, lines 13-15).

Claim 22 is canceled.

Claim 23 depends upon claim 11 and further specifies that the gaseous fraction is recirculated to the first reactor via a regulatable valve (Appl., p. 7, lines 1-3).

24. (Canceled).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(A) Whether claims 11, 13-21 and 23 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,225,421 of Promel et al. (“Promel”) in view of U.S. Patent Application Publication No. 2002/0128401 of Job et al. (“Job”), U.S. Patent No. 4,337,069 of German, Jr. et al. (“German”), and International Publication No. WO 96/27634 of Mehra et al. (“Mehra”), as evidenced by U.S. Patent No. 5,177,153 of Liebermann et al. (“Liebermann”).

VII. ARGUMENT

Appellants respectfully traverse the rejections recited in the Final Office Action dated June 3, 2011 (hereinafter “the Final Office Action”).

With respect to the Rejection of claims 11, 13-21, and 23, Appellants first argue that the combination of Promel, Job, German, Mehra and Liebermann do not render obvious the claims under 35 U.S.C. §103(a). Specifically, the Examiner has not demonstrated a suggestion to modify the references as advocated, or that a reasonable expectation of success exists in making such modification. Appellants submit that in the Rejection, the Examiner has incorrectly construed the teaching of Promel. In fact, the modifications of Promel suggested by the Examiner would render Promel unsatisfactory for its intended purpose. Appellants further argue that the secondary references cited do not remedy the deficiencies of Promel. Appellants argue that the Examiner has not explained why modifications of the references to arrive at the present invention would be made, and that there would be no predictability in making the modifications suggested by the Examiner. Appellants finally argue that the Examiner used inappropriate hindsight in formulating the current Rejection.

A. The Combination of Promel, Job, German, Mehra and Liebermann do not render obvious the invention of claims 11, 13-21, and 23 under 35 U.S.C. §103(a). A prima facie case has not been made out.

(1) Legal Standard

With respect to a Rejection under § 103, “a proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success” (emphasis added). *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991).

(2) The Examiner has not demonstrated a suggestion to modify the references as advocated, or that a reasonable expectation of success exists in making such modifications.

(a) *The Examiner has incorrectly construed the teaching of Promel.*

The Examiner has relied upon an incorrect construction of the disclosure of Promel in formulating the Rejection. With respect to the collection of gases in Promel’s reaction system, the Examiner has stated:

In response, it is the examiner’s position that Promel discloses two options for separating off gases from the reaction mixture: Option one in which, “The suspension is usually subjected to a reduction in pressure (final reduction in pressure), so as to remove the diluent, the ethylene, the hexene and, optionally, the hydrogen from the composition” (column 5, lines 20-25). Option two:

“According to an alternative form of the process according to the invention and more particularly when the diluent is isobutane, the gases exiting from the first reduction in pressure and from the final reduction in pressure are mixed, compressed and conveyed to a distillation column” (Column 5, lines 26-32, emphasis added). Thus, the use of a distillation column is an alternative only while using isobutane as a diluent. (Office Action mailed February 16, 2011, pages 9-10, paragraph 13)

The Examiner apparently does not dispute that “Option one” does not teach all the elements of the present claims. The Examiner instead points to “Option two,” which the Examiner interprets to include the important caveat that the distillation procedure is linked solely to the presence of isobutane. The Examiner then makes the critical assumption that Promel’s collection of gases from the first and final reduction in pressure steps are separate from the use of a distillation or further processing step. The Examiner’s conclusions with regard to Promel are not only completely without basis, but they represent a contradictory interpretation of Promel’s clear teaching. The Examiner’s rationale amounts to specially plucking the portion of Option two that support the Rejection, while eschewing the portions that don’t.

The full text in Promel to which the Examiner refers is as follows:

The suspension is usually subjected to a reduction in pressure (final reduction in pressure), so as to remove the diluent, the ethylene, the hexene and, optionally, the hydrogen from the composition. According to an alternative form of the process according to the invention and more particularly when the

diluent is isobutane, the gases exiting from the first reduction in pressure (intermediate reduction in pressure between the two polymerization reactors) and from the final reduction in pressure are mixed, compressed and conveyed to a distillation unit. This distillation unit is advantageously composed of one or of two distillation columns in series. Ethylene and hydrogen are withdrawn at the column top, a mixture of isobutane and of hexane is withdrawn at the column bottom and isobutene devoid of hexane is withdrawn from an intermediate plate. The isobutane-hexene mixture is then recycled in the subsequent polymerization reactor, whereas the isobutane devoid of hexane is recycled in the first reactor. (col. 5, lines 22-40)

Promel clearly teach that a distillation step is not linked to isobutane per se, but to the physical separation/recovery of the diluent from hexene in the reactor off-gas streams. Isobutane is preferred because of its ready recycling (col. 3, lines 15-18). If a different diluent is used, “exhaustive purification,” is used (col. 3, lines 20-22). But in either case, according to Promel, if gases are collected from the first reduction in pressure step and the final pressure reduction step, the purpose is to separate and recover the hexene/diluent contained in them, whether it would simply involve distillation or require “exhaustive purification.” Mixing of the low molecular weight, hydrogen-rich material resulting from the first reduction in pressure step, with the stream containing diluent, ethylene and hexene, would otherwise serve no purpose from a processing standpoint, and Promel supplies no contrary guidance or suggestion in this regard.

Therefore, the Examiner has improperly chosen a portion of Promel teaching a collection of gases from the first pressure reduction step and the final pressure reduction step (Option 2), as

severable and separate from the requirements of further processing the collected gases from the first and final pressure reduction steps to separate/recover the hexene/diluent.

(b) The modifications suggested by the Examiner would render Promel unsatisfactory for its intended purpose.

Modifying Promel as advocated by the Examiner, i.e., by replacing its distillation step with a scrubber, would render it unsatisfactory for its intended purpose. When isobutane is used as the diluent, Promel's distillation column includes an intermediate draw off, i.e., ethylene and hydrogen are being taken off the top of the column, isobutane and hexene off the bottom, and isobutane devoid of hexene withdrawn from an intermediate plate (col. 5, lines 33-37). To alter Promel's teaching to arrive at the currently claimed separation of liquid/gas from a cooled reactor gas, would require not only converting Promel's distillation (multistage) separation into a single stage separation, it would also eliminate the recovery of the purified isobutane material from the intermediate draw off point. Both of these would render Promel unsatisfactory for its intended purpose, since it would prevent the isobutane-hexene mixture from being recycled to a subsequent polymerization reactor and the isobutane devoid of hexene being recycled to the first reactor. (col. 5, lines 37-40).

Alternately, if a diluent other than isobutane was used, the Examiner's modification would substitute a scrubber for the "exhaustive purification," facilities required to recover the diluent from hexene in the gases generated from the first and last pressure reduction steps (col. 3, lines 18-25). However, this would also render Promel unsatisfactory for its intended purpose, since it would eliminate the required exhaustive purification processing step(s) and recycle of diluent to the first reactor. It is well-settled that if a proposed modification would render the

prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

(c) *Job, German, Mehra and Liebermann do not remedy the deficiencies of Lieberman.*

As discussed, Promel do not specifically disclose collecting off gases leaving all the reactors, compressing and cooling in a gas scrubber, and recycle of gaseous and liquid portions to the reactor (Final Office Action, page 4). The Examiner nevertheless seeks to remedy the deficiencies of Promel by citing Job, German, Mehra, and Lieberman. The Examiner acknowledges that Job do not specifically disclose cooling off gases in a gas scrubber (Final Office Action, page 5), but cites German as allegedly disclosing Applicants' claimed scrubber to cool the off gases. The Examiner further concedes that German disclose use of a scrubber in a gas phase olefin polymerization process (Final Office Action, page 6), but nevertheless cites Liebermann as showing a scrubber in a suspension polymerization process. The Examiner also acknowledges that Promel/Job/German do not specifically disclose the pressure and temperature of the compressed gases before and after cooling (Final Office Action, page 6), but nevertheless cites Mehra as allegedly teaching the missing limitations.

First, Job do not cure the deficiencies of Promel. In fact, while the Examiner is indeed correct in that Job do not specifically disclose cooling off gases in a gas scrubber, Job disclose that its polymerizations can be carried out in one, two or more reactors (paragraph [0077]), so that use in a multiple reactor system is specially chosen by the Examiner. Moreover, Job preferably relates to gas phase polymerization, (paragraph [0076]) not polymerization in

suspension, as in the current claims. Finally, in relation to the cooling of unreacted monomer, Job refers to U.S. Patent No. 5,462,999 of Griffin et al. (“Griffin”) as exemplifying the cooling of a stream containing unreacted monomer. However, Griffin refers to a conventional heat exchanger:

The recycle stream 16 once withdrawn from the reactor above the freeboard zone 14 is then compressed in compressor 28 and passes through the heat exchanger 26, where heat generated by the polymerization reaction and gas compression are removed from the recycle stream 16 before returning the recycle stream 16 back to the reaction zone 12 in the reactor 10. The heat exchanger 26 is conventional in type and can be placed within the recycle stream line 16 in either a vertical or horizontal position. (col. 9, lines 47-55)

Griffin therefore teaches the use of conventional heat exchangers, where the heat-transfer is indirect and the fluid to be cooled and the cooling stream are segregated; not the use of a scrubber, as in the present claims. Thus, Job teach the use of conventional heat exchangers, not a scrubber.

With respect to German, it also relates to gas phase olefin polymerization not polymerization in a suspension process, as in the current claims.

Gas phase reactor systems in which this invention is useful include both stirred bed reactors and fluidized bed reactor systems, (col. 2, lines 26-28)

The Examiner recognizes that German disclose use of a scrubber in a gas phase olefin polymerization process, but nevertheless cites Liebermann as showing a scrubber in a suspension polymerization process. However, the “suspension polymerization” of Liebermann is completely different from a suspension polymerization used to prepare polyolefins. Suspension polymerization in olefin polymerization denotes processes in which the olefin or the olefins are polymerized in a diluent. The prepared polymer forms solid particles which are suspended in the solution of the monomer(s) (and often further ingredients) in the diluent. The suspension polymerization of Liebermann is a polymerization in an aqueous suspension comprising an aqueous phase and an organic phase (col. 2, lines 54 to 61; claim 1). Such a process differs completely from an olefin polymerization process in which water acts as a catalyst poison.

The Examiner cites Mehra as allegedly teaching the temperature and pressure of different streams, however, the treatment of gases in Mehra precedes an absorption process followed by distillation.

Thus, the combination of Job, German, Mehra and Liebermann do not remedy the deficiencies of Lieberman.

(d) Examiner has not explained why modification of the cited references to arrive at present invention would be made.

The Examiner has not adequately explained why the proposed modifications proposed would be made. Indeed the Examiner’s analysis distills to simply designating a basket of references that disparately disclose various elements of the claims (according to the Examiner). As discussed above, the primary reference, Promel, do not disclose collection of gases, except to separate/recover hexene from the diluent stream. In that separation/recovery process, at least a

distillation process would be necessary if isobutane was the diluent, otherwise, “exhaustive purification” would be required with a diluent more difficult to separate from the hexene. There is clearly no suggestion to modify Promel to collect gases from Promel’s process by collecting the gases from the first and last pressure reduction steps, but then deviating from Promel by deleting use of a distillation process or exhaustive separation processes, and substituting a scrubber. In fact, the reality of the Examiner’s modifications would translate into installing equipment and facilities necessary for a process that separates/recovers diluent/hexene, but then abandoning it. This clearly would not be the path chosen by one of ordinary skill in the art. With respect to Job and German, the Examiner particularly selects only those elements from each reference that are aligned with the Rejection, but discounts the parts that do not. Job teaches the use of conventional heat exchangers, not scrubbers, to cool unreacted monomer, preferably in a gas-phase polymerization. German teaches a scrubber, but also in a gas-phase polymerization. Lieberman teach a suspension process (rather than gas phase), but it’s an aqueous suspension, comprising an aqueous phase and an organic phase to produce toner resins that do not include polyolefins.

The Examiner’s rationale is that:

it would have been obvious to one with ordinary skill in the art at the time of invention to modify Promel process and use compressing and cooling off gases as disclosed by Job and German for recycle of gaseous and liquid components to the polymerization reactor for an economical process.

It is noted that German discloses use of a scrubber in a gas phase olefin polymerization process, however, it is expected that the scrubber could be used in a suspension polymerization process also. It is evidenced by Liebermann.

In view of Mehra teaching the temperature and pressure of different streams, it would have been obvious to one with ordinary skill in the art at the time of the invention to modify Promel/Job/German invention and specify the temperature and pressure of compressed gases before and after cooling for proper characterization of compressed gases for recovery of monomers and other constituents. (Office Action, pages 6-7, *emphasis added*)

Appellants submit that the above is not an adequate rationale. It is essentially a recitation that such combination “could be used.” In particular, with respect to the Examiner’s argument that modifications would be done to ensure an “economical process,” as discussed above, by the Examiner’s rationale, the Examiner would eliminate Promel’s distillation system or exhaustive purification system, in lieu of a scrubber, thereby destroying its capability of separating/recovering the diluent/hexene. This is the exact opposite of an economical process.

The Examiner has thus not offered any adequate reason why one skilled in the art would practice a suspension process for preparing polyolefin polymers simultaneously having all of the recited limitations in the manner claimed. A proper analysis under 35 U.S.C. §103 requires showing that “there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) “We must still be careful not to allow hindsight reconstruction of references to reach the claimed

invention without any explanation as to how or why the references would be combined to produce the claimed invention.” *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 n.3 (Fed. Cir. 2008).

(e) No predictability in modifications suggested by the Examiner.

The current Rejection relies upon a collection of references daisy-chained together so as to allegedly disclose all the limitations of the current claims. However, such an approach, undertaken without a clear rationale for the serial modifications proposed to arrive at the present claims, clearly lacks the requisite predictability in making such modifications. In the Rejection, Promel is modified so as to eliminate its ability to separate and recover diluent/hexene from the collected gases. Job and German are used despite their teaching of gas phase-polymerization and the use of conventional heat exchangers. Lieberman is used, although it actually teaches suspension polymerization using an aqueous phase and an organic phase. The numerous extrapolations thus required to arrive at the present claims, and the resultant unpredictability associated with them, do not meet the standard required for a Rejection under §103 of the Supreme Court, which requires a finite number of identified, predictable solutions *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742 (2007).

(3) The Examiner uses inappropriate hindsight to arrive at the present claims.

In formulating the Rejection, Appellants submit that the Examiner has used impermissible hindsight, in that the Examiner has used Appellants’ claimed invention as the sole basis to focus the teachings of the references. As previously discussed, Promel is very clear in that the collection of gases from the first and final pressure reduction steps is meant to separate

and recover the diluent from hexene. When the diluent is isobutane, the separation is easier, thus requiring a distillation step. When the diluent is other than isobutane, the separation is more difficult, so that exhaustive purification would be required. However, in any event, the purpose of the collection of gases is to route them to a system for further separation. Modifying the reference as suggested by the Examiner, i.e., collecting the gases but eliminating the distillation step or exhaustive separation, with subsequent replacement by a scrubber, is simply not to be found in Promel. Indeed it is opposite to the teaching of Promel.

Job and German are used to allegedly teach cooling the polymer stream in a scrubber. However, Job teach the use conventional heat exchangers, preferably in a gas-phase polymerization. German teach a gas-phase polymerization process. Liebermann teach an aqueous suspension polymerization process to make toner resins. The rationale to modify Promel to arrive at the current claims is not coherently present as a whole in the references. The limitations are simply specially picked as-needed from the collection of references, so as to arrive at the current claims. Therefore, due to the lack of rationale in the cited references to make the suggested changes, and the fact that the rationale is thereby only present on the record in Appellants' specification, it logically follows that the Examiner's rationale has been improperly gleaned from Appellants' own specification, and that the combination of Promel, Job, German, Mehra and Lieberman is an exercise of impermissible hindsight.

In formulating the Rejection, Appellants respectfully submit that the Examiner has improperly used the invention as a blueprint for linking together pieces of prior art in order to find the invention obvious. *See Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1141 (Fed. Cir. 1985). The Federal Circuit has referred to using the invention as a "blueprint for piecing together the prior art ... [as] the essence of hindsight." *In re Dembiczak*, 175 F.3d 994, 999

(Fed. Cir. 1999). The Examiner has improperly used “hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention”

Eocolochem, Inc. v. S. Cal. Edison Co., 227 F.3d 1361, 1371 (Fed. Cir. 2000) (quoting *In re Fine*, 837 F.2d 1071, 1075 (1988)). In effect, the Examiner has conducted a “reference-by-reference, limitation-by-limitation analysis” which fails to demonstrate how the invention is obvious in light of prior art. (*See Eocolochem* at 1374)

VIII. CONCLUSION

Appellants respectfully ask the Board of Appeals and Interferences to reconsider and reverse the Section 103(a) rejection because the teachings of Promel, Job, German, Mehra and Liebermann fail to render Obvious Appellants’ suspension polymerization process.

Respectfully submitted,

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I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on October 28, 2011.

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IX. CLAIMS APPENDIX

1-10. (Canceled)

11. (Rejected) A continuous, suspension process for preparing polyolefin polymers having a bimodal or multimodal molar mass distribution from a monomer and at least one comonomer in the presence of a suspension medium in a first reactor and at least one downstream reactor which are connected in series and operated under different reaction conditions within each of the reactors, wherein an after-reactor is avoided and a total yield of more than 98% is obtained, the process comprises: collecting all offgases leaving the first reactor and the at least one downstream reactor; compressing the collected offgases to a pressure ranging from 0.5 to 2.5 MPa in a compression stage to produce compressed offgases; cooling the compressed offgases to produce a cooled offgas material comprising a gaseous fraction comprising an inert gas, hydrogen, and the monomer and a liquid fraction comprising the comonomer and the suspension medium; separating the cooled offgas material into the gaseous fraction and the liquid fraction; recirculating the gaseous fraction into the first reactor; and recirculating the liquid fraction into at least one of the downstream reactors,
wherein the compressed offgases are cooled in a gas scrubber by contacting with at least a portion of the liquid phase fraction.

12. (Canceled)

13. (Rejected) The process as claimed in claim 11, wherein the offgases are compressed to a pressure ranging from 0.9 to 2.0 MPa.

14. (Rejected) The process as claimed in claim 11, wherein the offgases heat up to a temperature ranging from 30 to 250°C while the offgases are compressed.
15. (Rejected) The process as claimed in claim 11, wherein the compressed offgases are cooled to a temperature ranging from 0 to 100°C.
16. (Rejected) The process as claimed in claim 11, wherein the compressed offgases are cooled to a temperature ranging from 20 to 50°C.
17. (Rejected) The process as claimed in claim 11, wherein the cooled offgas material is separated at a pressure ranging from 0.5 to 2.5 MPa into the liquid fraction and the gaseous fraction, which are collected in a pressure vessel.
18. (Rejected) The process as claimed in claim 11, wherein the continuous, suspension process is carried out in the presence of a Ziegler-Natta catalyst and hydrogen.
19. (Rejected) The process as claimed in claim 11, wherein the first reactor contains hydrogen and at least one comonomer, the hydrogen concentration in the first reactor being higher than the hydrogen concentration in the downstream reactor, and the comonomer concentration in the first reactor being lower than the comonomer concentration in the downstream reactor.
20. (Rejected) The process as claimed in claim 11, wherein the continuous, suspension process produces at least one polyolefin polymer comprising ethylene or propylene, and from 0 to 10% by weight, based on a total weight of the polyolefin polymer, of at least one alpha-olefin comprising from 4 to 10 carbon atoms.
21. (Rejected) The process as claimed in claim 11, wherein the suspension medium comprises a saturated hydrocarbon comprising from 4 to 12 carbon atoms, or a mixture of saturated hydrocarbons comprising from 4 to 12 carbon atoms.

22. (Canceled)

23. (Rejected) The process as claimed in claim 11, wherein the gaseous fraction is recirculated to the first reactor via a regulatable valve.

24. (Canceled).

X. EVIDENCE APPENDIX

Not applicable.

XI. RELATED PROCEEDINGS APPENDIX

Not applicable.